

WHAT IS CLAIMED IS:

1. A heat generator for use in a heating apparatus, comprising:

a central shaft;

5 an elastic body formed to be a predetermined thickness at a circumference of the central shaft;

a conductor layer formed to be a predetermined thickness at a circumference of the elastic body; and

10 a second elastic body formed to be a predetermined thickness at a circumference of the conductor layer,

wherein the heat generator is elastically deformed at a position which contacts a member to be contacted with the second elastic body at a predetermined pressure, and can supply heat and pressure to a medium  
15 to be supplied between the second elastic body and the member to be contacted, and an image developing agent carried by the medium.

2. A heat generator according to claim 1, wherein the central shaft includes material of a quality which  
20 does not generate heat when a magnetic field is supplied thereto, or which is not affected by magnitude of a magnetic field used as heat which the conductor layer should generate.

3. A heat generator according to claim 2,  
25 wherein, given that a resistivity is  $\rho(\Omega \cdot m)$  and a relative permeability is  $\mu$ , the central shaft satisfies  $\mu \leq 2.81 \times 10^9 \rho$ .

4. A heat generator according to claim 2, wherein the central shaft is provided such that the resistivity is  $10^6$  ( $\Omega \cdot m$ ) or more, a Curie temperature is  $180^\circ C$  or more, and the relative permeability is 200 or more.

5           5. A heat generator according to claim 1, wherein the central shaft includes at least non-ferrous metal or a non-metal material.

10           6. A heat generator according to claim 1, wherein the central shaft includes a first material in which the resistivity is  $10^6$  ( $\Omega \cdot m$ ) or more, the Curie temperature is  $180^\circ C$  or more, and the relative permeability is 200 or more, and a second material different in characteristic from the first material.

15           7. A heat generator according to claim 3, further comprising a central shaft protective material which covers the circumference of the central shaft.

8. A heat generator according to claim 6, further comprising a central shaft protective material which covers the circumference of the central shaft.

20           9. A heat generator according to claim 3, further comprising a central shaft reinforcing material provided over an overall length of the central shaft at inside of the central shaft.

25           10. A heat generator according to claim 6, further comprising a central shaft reinforcing material provided over an overall length of the central shaft at inside of the central shaft.

11. A fixing apparatus comprising:

a heat generator including a central shaft, an elastic body formed to be a predetermined thickness at a circumference of the central shaft, a conductor layer  
5 formed to be a predetermined thickness at a circumference of the elastic body, and a second elastic body formed to be a predetermined thickness at a circumference of the conductor layer;

a magnetic field generator which provides a  
10 magnetic field such that the conductor layer of the heat generator can generate heat; and

a pressure member which is provided along the central shaft of the heat generator, and applies pressure that deforms the elastic body layer by a  
15 predetermined amount to a predetermined position of the central shaft or the heating generator,

wherein the central shaft includes material of a quality which does not generate heat when a magnetic field is supplied thereto, or which is not affected by  
20 magnitude of a magnetic field used as heat which the conductor layer should generate.

12. A fixing apparatus according to claim 11, wherein a plurality of the magnetic field generators are provided along a direction in which the central  
25 shaft of the heat generator extends.

13. A fixing apparatus according to claim 12, wherein, given that a resistivity is  $\rho(\Omega \cdot m)$  and

a relative permeability is  $\mu$ , the central shaft satisfies  $\mu \leq 2.81 \times 10^9 \rho$ .

14. A fixing apparatus according to claim 12, wherein the central shaft is provided such that the  
5 resistivity is  $10^6$  ( $\Omega \cdot m$ ) or more, a Curie temperature is  $180^\circ C$  or more, and the relative permeability is 200 or more.

15. A fixing apparatus according to claim 12, further comprising a heat transfer member which can  
10 reduce heat generated from the conductor layer being varied between the magnetic field generators of the conductor layer.

16. A fixing apparatus according to claim 15, further comprising a central shaft protective material  
15 which covers the circumference of the central shaft.

17. A fixing apparatus according to claim 15, further comprising a central shaft reinforcing material provided over an overall length of the central shaft at inside of the central shaft.

20 18. An apparatus for fixing an image developing agent carried by a recording material onto the recording material, comprising:

a heat generator which includes a region formed from a first material in which a resistivity is  $10^6$   
25 ( $\Omega \cdot m$ ) or more, a Curie temperature is  $180^\circ C$  or more, and a relative permeability is 200 or more, and a region formed from a second material different in

a characteristic from the first material, the heat generator further including a central shaft, an elastic body formed to be a predetermined thickness at a circumference of the central shaft, a conductor layer formed to be a predetermined thickness at a circumference of the elastic body, and a second elastic body formed to be a predetermined thickness at a circumference of the conductor layer;

a magnetic field generator which provides a magnetic field such that the conductor layer of the heat generator can generate heat; and

a pressure member which is provided along the central shaft of the heat generator, and applies pressure that deforms the elastic body layer by a predetermined amount to a predetermined position of the central shaft or the heating generator.

19. A fixing apparatus according to claim 18, wherein the central shaft is formed from a material including at least ferrite.